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WAR AND AGRICULTURE: 1914 and 1939

After an interval of 25 years Europe is again at war. In some important respects the similarity between 1914 and 1939 begins and ends with that fact. With particular reference to economic conditions in agriculture in the United States and abroad, however, the points of difference and similarity between 1914 and 1939 are fairly clearly defined.

There was no sustained rise in the general level of farm and commodity prices at the outbreak of the World War in 1914. As a matter of fact prices received by farmers for all farm products dropped below the 1909-14 average from August to September in 1914 after having been above that average for a year. This price index remained below that average for most of 1915 and not until in 1916 did prices begin to climb steadily upward.

At the outbreak of the present European War, domestic commodity and security prices advanced sharply, in contrast with the drop that occurred at the outbreak of the war in 1914. These advances in prices of many commodities, including cotton and other raw materials, apparently reflected increased purchases by domestic buyers and speculators who anticipated further price advances as a result of war-time demand. In general the indications are that the effects of the present conflict on business conditions and on the general price level during the initial stage of war may be more nearly similar to those of the second year of the World War.

Prices: Gradual Rise

The overall increases in farm prices, production and costs in the World War came over a four-year period of actual war and the developments of 1914-16 were substantially different from those of the last two years of the war. The following tables show what took place and afford a basis of comparison between the 1914-18 period and the current situation in agriculture:

Index numbers of prices received by farmers for specified commodities, United States, calendar years 1914-16 and 1936-38, and January-September average, 1939 (August 1909-July 1914 = 100)

Commodity	1914	1915	1916	1917	1918		1936	1937	1938	1939 ^{1/}
All farm products	101	98	118	175	202		114	121	95	91
Wheat	99	127	135	230	231		109	121	75	67
Cotton	84	73	110	177	238		94	90	67	69
Cottonseed	93	112	187	265	301		144	137	97	96
Tobacco	99	82	122	199	253		172	200	172	133
Hogs	105	91	114	188	220		127	132	107	91
Cattle	120	115	124	156	181		115	133	121	132
Butterfat	98	100	114	146	178		124	128	101	87
Fruits ^{2/}	91	82	100	118	172		100	122	73	80

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^{1/} Average of January-September.

^{2/} Apples, oranges, lemons, grapefruit and pears.

Index numbers of volume of exports from the United States of specified commodities, 1914-18 and 1936-38 (Pre World War 5-year average = 100)

Commodity	1914	1915	1916	1917	1918		1936	1937	1938	
Year beginning July 1										
Wheat ^{1/}	309	228	190	130	272		21	97	107	
Cotton ^{2/}	99	70	70	53	63		69	71	44	
Fruits ^{3/}	119	109	101	63	111		192	283	316	
Tobacco ^{4/}	89	113	105	74	160		106	117	121	
Lard	100	90	94	83	153		22	40	50	
Calendar year										
Meats ^{5/}	96	252	247	251	479		30	29	36	
Dairy products ^{6/}	92	651	879	904	1,248		59	68	89	

Bureau of Agricultural Economics. Index numbers for year beginning July 1, from office of Foreign Agricultural Relations.

^{1/} Including flour.

^{2/} Including linters.

^{3/} Apples, dried apricots, oranges, prunes, and raisins.

^{4/} Unmanufactured.

^{5/} Excluding lard.

^{6/} Milk equivalent.

Index numbers of volume of production of specified commodities,
United States, 1914-18 and 1936-39
(Pre-World War 5-year average = 100)

Commodity	1914	1915	1916	1917	1918		1936	1937	1938 _{1/}	1939 _{2/}
Crop year -										
Wheat	132	148	93	91	133		92	128	137	108
Cotton <u>3/</u>	123	86	88	88	93		94	140	89	89
Fruits:										
Dried fruits <u>4/</u>	110	147	143	176	146		231	301	310	294
Apples	144	130	110	95	96		67	120	75	<u>5/</u>
Tobacco	99	110	115	126	138		110	149	131	<u>158</u>
Calendar year -										
Dairy products <u>6/</u>	103	109	112	108	98		146	145	156	155
Livestock:										
Lard	94	102	103	88	115		103	88	108	129
Meats <u>7/</u>	97	103	110	107	120		117	108	112	117

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- 1/ Preliminary.
- 2/ Estimated.
- 3/ Including city crop.
- 4/ Excluding apples.
- 5/ Estimate of total apple crop is not made. Commercial production is indicated to be about 23 percent higher than in 1938.
- 6/ Milk equivalent.
- 7/ Excluding lard.

Credit: Supply Ample

One striking difference between the present situation in this country and that 25 years ago is in general business conditions. When war began in Europe on September 1, 1939 the United States had experienced a long period of depression and a relatively short period of recovery had just preceded the outbreak of hostilities. Just the opposite condition prevailed in 1914. Following the prosperous years 1912 and 1913 a recession had set in by 1914 and the financial markets were further disrupted by the war.

The credit situation differs greatly from that existing at the outbreak of war in 1914. At that time the United States was a debtor nation. Gold exports caused a credit stringency in the United States

with high interest rates. The latter development occurred in a period of declining business activity and industrial production was sharply curtailed in the last half of 1914. At the present time, the business outlook, even excluding war demands, is on the upturn; credit and gold supplies are expanding, and interest rates are at the lowest levels in our history.

Today member banks have reserve balances with the Federal reserve banks of about \$11,526,000,000. Actual reserve requirements are about \$6,256,000,000, leaving excess reserves of roughly \$5,270,000,00. In contrast with the period that marked the outbreak of the European war in 1914, the level of deposits is expanding as a result of gold imports, an increasing volume of loans, and from large governmental expenditures. Adjusted demand deposits of member banks of the Federal Reserve system stand at about \$24,000,000,000 today -- the highest level on record.

Wheat: Hugo World Stocks

In some significant respects the agricultural supply situation in the United States today is not unlike that of 1914. That does not mean, however, that foreign demand is the same or that similar price developments are to be expected. The ability of France and England to finance their imports from this country now is also not what it was in 1914.

Wheat supplies in the United States are estimated at 985 million bushels compared with 997 million bushels in 1914, or about 300,000,000 bushels in excess of domestic requirements. While annual domestic use has increased about 30 million bushels since 1914 the decline in exports has been much greater than the increase in domestic consumption. Domestic disappearance for the year beginning July 1, 1939, is forecast at about 690 million bushels. After deducting this from the estimated supply there will be 295 million bushels left for export or carry-over. Since it is expected that exports for the year beginning July 1, 1939 will not equal the 105 million bushels averaged in the last two years the carry-over may be in excess of 190 million bushels.

World supplies of wheat in 1939, however, far exceed anything known in 1914. The total world supply is estimated to be 1,800 million bushels larger than in 1914, while world consumption is only about 900 million bushels larger. In these figures and in all subsequent references to world wheat production and stocks the U.S.S.R. and China are excluded. World wheat supplies in 1914 were estimated at about 3.5 billion bushels compared with 5.3 billion bushels in 1939.

The largest carry-over of wheat in the history of the world is in prospect for 1940. It is estimated that the world carry-over will be 1,400,000,000 bushels on July 1, 1940, which is 200,000,000 in excess of the amount brought over on July 1, 1939. The total annual world trade in wheat is only about 600 million bushels. The situation bears no resemblance to that during the latter part of the World War when we had small world supplies and high prices.

There is little prospect for any marked reduction in European wheat acreage this year. Probable declines in the areas where military operations are in progress are likely to be at least partly offset by increases in neutral countries. Furthermore, the belligerents are not the same today and in the last European war. Russia, Italy and the Balkan countries are not yet involved and the wheat fields of France are not seeing the same action they did in the last war.

It is not expected, therefore, that the world wheat acreage in 1940 will be greatly different from the 287,000,000 acres this year. Such an acreage, with average yields per acre, would again result in a crop in excess of likely world consumption. In 1914 the world crop was off by about 435 million bushels due to short crops in Canada, Australia and Russia and as a result our wheat exports were the largest on record, exceeded since then only by our exports in 1920. These large exports did not hold and by 1917 wheat exports were only 30 percent above the pre-war average. Wheat consumption in the warring countries declined through the duration of the war. World shipments also declined during this period. There is, therefore, little prospect for an increase in world shipments next year.

Wheat Price

Farm prices of wheat in the United States averaged 85 cents in August 1914, the month in which War was declared. In September they averaged 93 cents, 95 cents in October, 92 cents in November and 97 cents in December. This advance was only partly the result of the war, and partly a reflection of the very small crop in Canada in that year. Subsequently there was a crop failure in Australia. However, in spite of the higher general price level and the very large United States and Canadian crops, the 1915 domestic crop sold at prices slightly lower than the previous crop.

Cotton: World Supply

In the case of cotton this year's world supply of American cotton is 25 million bales, made up of about 12,000,000 bales of new production and 13,000,000 bales carried over. In 1914 we produced a record crop of 16.2 million bales and there was a carry-over of 1.2

million bales in the United States. In 1914 the record cotton crop cut the price in two whereas with the outbreak of war in Europe in September 1939 cotton prices advanced sharply. For the 11-1/3 months of the 1914-15 season spot prices at New Orleans averaged a little below 8-1/4 cents compared with an average of 13-1/8 cents in the 12 months ended July 1914. It was not until the second full year of war that cotton reached its pre-war price. The indicated total world supply for the current season (1939-40) is about 2-1/4 times as large as the world consumption of American cotton during the preceding season and would be even larger relative to the current season's consumption if consumption should decline as it did during the first years of the World War. In 1914-15 the world supply of American cotton was less than 1-1/2 times as large as the 1913-14 world consumption of American cotton.

Cotton: Under Loan

In contrast with this, however, is the fact that nearly 10-1/4 million bales, or roughly two-fifths, of the indicated supply of American cotton is owned by the United States government or is being held as collateral against government loans. Much of this cotton either cannot be released during the current season, according to present law, or cannot be released without a loss unless prices advance considerably over present levels. Today's cotton picture differs from that of 1914 in another respect. In the years immediately prior to the outbreak of the World War the area which now comprises greater Germany consumed about one million bales more cotton per year than the population occupying this area consumed during the 1938-39 season. In 1914 the immediate effect of the war was to deprive us of the German market amounting to about 2.5 million bales. Today the loss of the German market means only the loss of 320,000 bales. Total world consumption of cotton in the past season was about 6 to 8 million bales larger than the world consumption 1913-14.

Dairy: Little Change

Insofar as the dairy industry is concerned the outbreak of the war in 1914 had little effect. Butter prices during the summer of 1914 before the beginning of the war were lower than in 1913 and 1912. Butter production in 1914 was larger than in the two previous years and there had been a considerable decline in business activity from the early part of 1913 to the summer of 1914. The first effects of the outbreak of the war in 1914 on the domestic dairy industry was to stimulate the exports of such dairy products as cheese and evaporated milk and to curtail the importation of foreign cheese. Even though

exports of dairy products rose rapidly in the four-year period 1914-18, the total was a relatively small proportion of the total milk produced in the United States. Total exports for this 4-year period averaged only 3.8 percent of the total domestic production.

These increases in exports during the early part of the World War had very little effect on prices of dairy products, and it was not until 1916 that any rise in prices occurred. Increases in domestic business activity, consumer incomes, and the general level of prices in 1916, 1917, and 1918 were accompanied by advancing prices of dairy products, but the increases were not as rapid as those for feeds and meat animals.

Total production of manufactured dairy products rose in 1914 from 42.1 million pounds to 44.6 millions in 1915 and 45.9 million in 1916. There was some decline in production in 1917 and 1918 and not until then was there any decline in United States consumption of dairy products. Prior to 1917, the increases in production had more than offset the effects of the increase in exports and the decline in imports in the volume of domestic consumption. Average production of manufactured dairy products for 1934-8 in the United States was 60.3 million pounds. Per capita domestic consumption has risen from an average of 434 pounds in 1910-14, to 473 pounds in 1934-8.

At the present time world production of butter is about 50 percent greater than in 1914 with the most significant increases in production taking place in the southern hemisphere. Exports of butter from southern hemisphere countries were not curtailed during the World War, while the drop of one-third in exports of butter from 1915-18 was due almost entirely to the decrease in exports of the Northern hemisphere countries, particularly Denmark. If shipping is available the present European War should have less effect on world production and exports of butter and cheese than the World War had. Production in countries not directly affected is much larger than in 1914.

During 1938 and the first half of 1939 butter prices in the United States were about the same as world prices, partly as a result of increased domestic production and the effects of the business recession which began in the fall of 1937. After the outbreak of the war prices of butter rose sharply. This rise, however, was largely seasonal in nature. With the recent rise and the expected further improvement in business, employment and payrolls, it seems probable that during the coming year butter prices in the United States will rise in relation to foreign prices. This would tend to reduce the possibility of butter exports during the coming year. It seems that of our principal dairy products the exports of concentrated milks may expand the most.

Fats and Oils Prices Down

During the first two years of the World War the combined prices of the eight principal domestically produced fats and oils, including butter, lard, edible and inedible tallow, grease, oleo oil, cottonseed oil, and linseed oil remained comparatively stable. It was not until the spring of 1916 that the prices of these commodities advanced sharply. In July of that year the price index for fats and oils stood at 109 in relation to the 1910-14 average, having risen from 91 in July, 1915. In 1916 the United States also changed from a net exporting to a net importing basis for fats and oils.

In contrast with the situation obtaining at the beginning of the war in 1914 today the index of prices of domestic fats and oils in August 1939, was 72 percent of the 1910-14 average. This was the lowest in the 30 years of record with the exception of the period from January 1932 to May 1934.

Domestic supplies of fats and oils other than paint oils for the year beginning July 1, 1939 are the largest on record. The need for imports of vegetable oils and oilseeds is considerably less this year than last, when net imports of fats, oils, and oilseeds in terms of crude oil totaled about 1.5 billion pounds. Production of fats and oils from domestic materials in 1939-40 probably will total more than 8.5 billion pounds, or at least 5 percent more than the large production of 1938-39.

Chiefly because of the large supplies domestic prices for most fats and oils were at their lowest point since 1934 in August of this year but with outbreak of war in Europe they advanced sharply in September. Prices of vegetable oils and oilseeds in the exporting countries of the Southern hemisphere and the Far East may be depressed as a result of the war, while prices in the importing markets of Europe may be increased. No material advance in domestic prices seems likely, however, unless commodity prices generally score a sharp advance. With improved prospects for exports, lard prices may regain their former premium over cottonseed and other vegetable oils, lost in recent months because of the large surplus in domestic lard supplies.

Livestock: Production Up

Turning now to the livestock situation the record shows that at the beginning of the war in 1914, total meat production in the United States was the smallest in several years. The ratio of meat production to population had been declining for more than a decade prior to 1914 and consequently meat exports had fallen off considerably. In 1914 our total meat production, excluding lard, was 14.1 million pounds

which was 400,000 pounds under the 1909-13 average. Preliminary estimates for 1939 place domestic production of meats at 16.9 million pounds.

Since 1937 livestock production in this country has been recovering from the effects of the severe droughts of 1934 and 1936. Following these setbacks the production of meat animals was on the upward trend with 1939 expected to show total production 3 percent higher than it was in 1938. The effects of the present European War upon livestock prices probably will come chiefly in two ways: An expansion in exports of livestock products, which may be confined mostly to hog products, and an increase in domestic consumer demand for meats which will result from the increase in industrial activity and consumer incomes brought about directly or indirectly by the war. The extent of the improvement in both domestic and foreign demand for livestock products will depend to a considerable extent upon the duration of the war as well as the number of countries involved.

Total exports of lamb from this country did not change much from 1914 through 1917. As a result of the war, exports to Germany were cut off from 1915 through 1918, but shipments to other countries increased. In 1918, total lamb exports increased. Since 1934, our exports of lamb to Germany have been small; hence, no important export market for lamb will be cut off by the present war. Some increase in exports of lamb to Great Britain is probable.

In the 1914-18 period, exports of beef from the United States increased greatly, as European imports from South America and Australia were reduced by shipping difficulties. Although the situation has not yet clarified, there are no indications that shipments of beef from Argentina and Uruguay during the present war will be greatly affected. In such case, our exports of beef probably will not be increased much as a result of the war. Nor does it seem probable that any export trade for lamb and mutton will develop. It should be noted, however, that higher prices for hides and wool brought about by the war will be strengthening factors to prices of cattle and lambs.

Large Sugar Stocks

In the case of sugar the world supply situation in 1939 can hardly be compared with that which obtained in 1914. For the marketing year 1938-39 the world supply figure totaled 38.5 million short tons of raw value. Current world production is 75 percent larger than it was in 1909-14 when it averaged 19.3 million tons of raw value. Production for the world was 33.2 million tons in 1938 and stocks of 5.2 million tons in 23 countries brought the supply total to 38.5 tons.

Sugar supplies for the continental United States for 1938-39 totalled 8,304,000 tons of which 2,383,000 tons were from domestic production. Total stocks of raw and refined sugar held by refiners, importers and distributors of direct consumption sugar on July first of this year were 1,980,000 tons of raw value or 20 percent over stocks a year ago. One important difference between 1914 and 1939 as far as our domestic sugar supply is concerned is the fact that we were producing in 1938 about 1,200,000 tons more of our own sugar on our own soil. Beet sugar production in 1938 was 1,803,000 tons compared with the 1909-13 average of 807,000 and in 1938 we produced 580,000 tons of cane sugar as against 302,150 tons on the average for 1909-13.

The increase in total output the world over, however, is not particularly significant. What is important is the probable course of demand and the response of the several supply areas to that demand under war conditions. At the beginning of the World War in 1914 the allied powers were in a particularly unfortunate position. They were large importers and for a number of years had been importing the bulk of their supplies from the countries with which they were at war. For five years prior to the World War the United Kingdom had been getting 50 percent of its sugar from Germany and Austria, while another 15 percent came from other European countries which could supply sugar after hostilities began. This made it necessary for Great Britain to look elsewhere to supply about 70 percent of its sugar needs which amounted to about 1,500,000 tons or 25 percent of the total world sugar export trade at that time. The French beet sugar areas were in the battle zone and beet sugar production was curtailed throughout Europe. This made the demand on non-European sugar tremendous.

In contrast to its position in 1914 Great Britain is today virtually independent of continental sugar, drawing the bulk of its supplies from the Empire, the West Indies and South America. It also produces half a million tons at home compared with nothing in 1914.

The present situation is strikingly different. The non-European supply areas as a whole have excess capacity and are capable of a rapid expansion of output. This capacity was developed during the post-war period when, despite falling prices, spectacular advances in cane technology plus a widespread resort to tariffs and bounties called forth an output that rendered sugar production generally unprofitable, particularly for the great free-market producers, Cuba and Java. The potentialities for increased output in Cuba, Java, Puerto Rico, the West Indies, Central and South America, and the American protected area seem to rule out any wartime shortage of such an acute nature as was experienced during 1914-15.

Tobacco and Fruits

Tobacco is another one of our important crops whose export market is likely to be adversely affected by the European War. This year's production, 1,600,000,000 pounds, is the largest on record with the probable exception of the 1930 crop. At the outbreak of the World War in 1914 foreign interests withdrew their buyers from the auction markets. At that time foreign buyers were on the market again in about 3 weeks. Nevertheless our tobacco exports declined in 1914, rose somewhat in 1915 but dropped off sharply through 1916-17. Tobacco prices remained virtually unchanged in 1914 and 1915 but started to rise in 1916, reaching 31.2 cents, season average price, in 1919.

The most significant current development in tobacco is the announcement by Secretary of Agriculture Henry A. Wallace, on October 9, 1939 of plans for financing a portion of the remainder of the 1939 crop of flue-cured tobacco. Under these plans the Commodity Credit Corporation will make purchases of, or loans on that portion of the crop normally taken by foreign manufacturers. These foreign concerns, who now have at least two years' supply of flue-cured tobacco on hand, are prevented from making additional purchases this year because of difficulties in obtaining exchange as a result of the European War.

The first two years of the World War had little effect on the domestic and foreign demand for United States fruits and fruit products. Crops in 1914 and 1915 were large and although exports to Germany, the Netherlands, Belgium, and France dropped off the total export volume was fairly well maintained with Canada, the Scandinavians and other countries, providing increased outlets. In the third and fourth years of the World War exports declined but prices advanced along with the rise in the general price level.

There are a number of differences in the 1939 situation as compared with 1914. Fruit production has increased considerably and is more highly commercialized here and in the world in general. Fruit consumption has also increased in this country and in Europe. Under the circumstances exports have become of increasing importance as a market outlet for United States fruits during the last 25 years. The 1939 fruit situation in the United States may be characterized as one of relatively large supplies, improving domestic demand and highly uncertain export demand.

The most important market for fruit from the United States is the United Kingdom. In the World War fruit exports of this country to the United Kingdom were maintained at a relatively high level until 1917-18. In 1939, however, the United Kingdom is requiring import licenses for all

fresh, canned and dried fruit except fresh apples, pears, bananas, oranges, grapefruits and limes. This act will probably tend to restrict our exports. In 1914 Germany was an important market for our fruits but in recent years her takings have been small. Some of the smaller Baltic countries have become important markets and they are now being practically closed. The Scandinavian countries, the Netherlands, France and the United Kingdom are now more important than they were in 1914.

